



Where science ends and scientism begins

Maarten Boudry and Massimo Pigliucci (eds.): Science unlimited? the challenges of scientism. Chicago, IL: University of Chicago Press, 2017, vi + 320pp, 105.00 HB; \$35.00 PB

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‘Scientism’ is difficult to define. Coined in the mid-nineteenth century, its primary and original meaning is neutral: ‘thought or expression characteristic of scientists’ (the *New Oxford American Dictionary*). In the early twentieth century, it acquired a pejorative meaning which could be crudely defined as excessive belief in the power or value of science. This is its common use nowadays. In recent years, some have attempted to subvert its negative connotation by appropriating the term as a neutral or honorific rubric to denote philosophical positions criticized for being ‘scientistic.’ For example, a contributor to *Science Unlimited? The Challenges of Scientism* (‘SU’), Alex Rosenberg, ‘embraces’ scientism (203; cf. 213; 188). Another contributor, Don Ross, elsewhere assents to it. In the opening chapter to *Every Thing Must Go: Metaphysics Naturalized*, entitled ‘In Defence of Scientism,’ Ross, James Ladyman and David Spurrett declare that they ‘admire science to the point of frank scientism’ (Ladyman et al. 2007, p. 61). The wide use supports the need for clearer accounts of what scientism is and what is wrong with it. *Science Unlimited?* does an excellent job of providing both.

Defining ‘scientism’ is one of the book’s two central aims. As a criticism, scientism is most often levelled against attempts to expand the bounds of natural science. This has led to some treating scientism as a form of scientific imperialism, or synonymously with ‘scientific expansionism’: the view, as put by the author of one of the few monographs on scientism, Mikael Stenmark, that ‘the boundaries of science ... should be expanded in such a way that something that has not previously been understood as science can now become a part of science’ (Stenmark 2003, p. 783; cf. Stenmark 2001). This is the form with which SU is predominantly concerned. When scientism is defined as a form of imperialism or expansionism, the question arises of what science’s boundaries are. SU’s second central aim is to adumbrate these. Circumscribing science’s boundaries involves attention to two types of demarcation:

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first, the Popperian project of distinguishing science from pseudoscience; second, demarcating science from non-science. SU is concerned with the nature of science insofar as this helps with the second, with the aim of elucidating science's limits and identifying where accusations of scientism are warranted (2).

The volume's other principal concern is identifying what is wrong with scientism. The editors describe the 'problem with scientism' as 'an *excess* of science' (3) and define it as a matter of excessive 'science enthusiasm.' The volume addresses whether the concept 'scientism' can help to identify 'forms of (excessive) science enthusiasm' (2), primarily by exploring 'the limits and nature of science' and 'the territorial disputes arising from scientific progress' (5), through discussions of the relationship between science and other 'ways of knowing.' 'Science unlimited' is the editors' name for scientism's strongest form: the view that science has no limits (2).

It is difficult to find examples of 'science unlimited.' The best candidate emerging from SU is the view that science can provide an objective basis for morality. The conclusion one reaches from SU is that this is the only relatively uncontroversial use of 'scientism' nowadays to denote a philosophical position, where it carries a pejorative connotation. Several contributors cite contemporary popular scientists as proponents. Most often cited is Sam Harris (22; 44; 123; 189); others criticized are Richard Carrier (44) and Michael Shermer (97–99; 189). Justin Kalef offers the most charitable case for and strongest objections against Harris (96–101).

Several contributors argue that science has very few boundaries but is limited by its incapacity to provide an objective basis for morality. A third of the chapters argue for this circumscription to science by appealing to Hume's argument that we cannot derive 'ought' from 'is' (the chapters by Kalef, Maarten Boudry, Stephen Law, Thomas Nickles, and Michael Ruse). In this way, although SU meets its objectives of defining scientism and adumbrating science's limits very well, the approach toward the latter sometimes feels a little repetitive. Philip Kitcher takes a different approach. Kitcher's excellent chapter argues that values cannot be reduced to facts and that value judgements cannot be separated from scientific practice, such that scientism is untenable if it entails reducing all inquiry to scientific inquiry (118).

The manifold definitions of 'scientism' and disagreements over its use result in some contributors endorsing relativism about scientism. Ross writes that there 'is no fact of the matter about what scientism is, only facts about what different sets of people take scientism to be; and ... there is much disagreement across these sets' (225). Some argue that we should eliminate the term, because it has acquired a connotation of anti-science through its misappropriation by some to immunize domains—particularly religion—from scientific criticism or expansion (4). Taner Edis, Boudry, and Law criticize this use of scientism but do not suggest we should eliminate it (46; 81; 89; 121–2; 141); Russell Blackford argues that scientism carries too much 'theological baggage' and should be eliminated (28; cf. 13; 27).

The detailed scrutiny to which SU subjects this use of scientism is important. In a time when the Trump administration has pledged to withdraw from the Paris Agreement and is attempting to interfere with how science is practised such that the US Environmental Protection Agency is effectively prevented from using research that relies on private medical records to support proposals for rules to limit pollution,

exposing the dangers of hostility toward science is as important as exposing excessive science enthusiasm (cf. Meyer 2018).

Although scientism carries anti-scientific baggage, the term can surely be salvaged, but not univocally. Beyond relativism and what we might call an ‘eliminativist’ approach to scientism, a third option is defining scientism as a cluster concept—for example, one united by family resemblance. Blackford would reject this; he doubts there is ‘a good umbrella term’ for the issues motivating its use (27). While perhaps no other author in SU except Rosenberg would reject defining scientism as a cluster concept, none appears to endorse it either.

Consistent with treating scientism in this way is the project of defining forms of scientism and their features. This project is usefully undertaken in SU. For example, the editors articulate five typical *prima facie* characteristics of scientism, based on current usage (2). Although none of the criteria identified is sufficient for identifying all instances of scientism, this does not make the concept redundant; distinctions need to be carefully drawn and the concept needs a more detailed mapping. SU sketches such a map; a conceptual map is also forthcoming by one of the contributors, Rik Peels (2019). The many criteria for identifying scientism and its manifold uses support the view that defining scientism as a cluster concept might be the best recourse. The volume could perhaps be improved by giving this more detailed consideration.

Another praiseworthy feature of SU is that it is mostly pitched toward a general readership. Given the wide interest in scientism beyond the academy, it is good to see a volume of high quality essays which are mostly accessible to a general audience and where eminent philosophers critically engage with influential public intellectuals. ‘A number of chapters may require some technical background in philosophy of language ..., economics ..., and epistemology,’ the editors write, ‘but most are accessible without prior knowledge in philosophy’ (7–8). This is generally correct, aside from those mentioned by the editors (Ross, Filip Buekens, and Tom Sorell). The chapters by Peels, Rosenberg, Thomas Nickles, and Mariam Thalos should be added to that list.

The thematic connections between chapters make it more surprising that the chapters are organized alphabetically, by the surnames of authors. The editors state that this is because ‘there is no particular order of exposition’ (7). This is true and perhaps contributes to the book’s readability; and a virtue of the book is that some chapters draw upon and develop accounts and arguments offered in others. Nonetheless, the chapters could be loosely thematically structured as follows. The chapters by Boudry, Buekens, and Nickles argue that forms of non-scientific knowledge are not reducible to scientific knowledge. The chapters by Kitcher, Pigliucci, and Ruse focus on either adumbrating limits to science or problems concerning demarcation, or both; they also argue against scientific reductionism. The chapters by Blackford, Edis, Kalef, and Law sketch the limits of science; Blackford, Edis, and Law also criticize scientism’s use as an immunizing strategy; Kalef and Law also argue that we cannot reduce philosophical questions to scientific questions. The chapters by Ross, Sorell, and Thalos address problems concerning scientism via case studies, in economics (Ross), experimental philosophy (Sorell), and sociobiology (Thalos). The chapters by Ross and Thalos focus on reductionism as the greatest problem facing

scientism. The chapters by Peels and Rosenberg proffer what each author argues is the fundamental problem for scientism, in terms of the main obstacle facing scientific reductionism. Rosenberg argues that scientism can overcome this, whereas Peels argues that this makes scientism untenable.

Science Unlimited? is an excellent volume which makes many valuable contributions to research on an important and timely theme. It sheds much needed light on what scientism is and what is wrong with it, and on the question of what science's limits are. It should be of wide interest, both widely within academia and to a general audience.

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